

Lightning Current Detector

In this photo of a Kennedy Space Center (KSC) launch complex, the device in the foreground is a Lightning Current Detector (LCD) developed by KSC to monitor the magnitude of lightning strikes. The information it supplies is useful in evaluating lightning protection designs for such systems as telephone cables, radio broadcast towers, power transmission equipment and oil well towers.

Intended to overcome disadvantages in earlier methods of lightning current measurement, the LCD is a simple, passive device requiring no external equipment, power or human attention. Its prime component is a length of magnetic tape on which a reference signal has been prerecorded. The tape is housed within a plastic

tube mounted perpendicularly to an exposed conductor—for example, a guy wire. When lightning strikes the wire, the current creates a magnetic field that erases part of the prerecorded signal on the tape. By playing back the tape and timing the erased portion with the assistance of a special meter, it is possible to compute the peak lightning current.

For further development of the detector, the Department of Energy contracted with the University of Florida for a study in which 150 LCDs were tested along power lines to determine lightning effect on power distribution systems; KSC assisted the university's Electrical Engineering Department in modifying the LCD for the project. NASA has also awarded a contract to Lightning Technologies, Inc., Pittsfield, Massachusetts to improve methods for using the devices in various applications.

